

Syllabus

Fall 2008

- Course:** Statistics 892, Sequence Analysis
- Instructor:** Steve Kachman
- Office:** 354B Hardin Hall
- Phone:** 472-7302
- Office Hours:** MWF 10:00-11:00 and by appointment
- Text Book:** *Statistical Methods in Bioinformatics: An Introduction*, Ewens and Grant
- Prerequisites:** Probability and Distributions
Calculus
Statistical Methods
SAS
- Homework:** Approximately once every other week
20% will be deducted for each day late.
- Exams:** Two exams, will be announced at least one week in advance
- Final Exam:** Thursday, Dec 18 10:00-Noon
Revise travel plans accordingly.
- Conflicts:** Expected to take exams at the scheduled time
If an exam conflicts with an activity vital to your program,
please have your major advisor contact me well in advance.
I should be notified as soon as possible of any potential conflicts.
- Grading:** Exams 200 pts
Final 150 pts
Homework and Quizzes 100 pts
Grading will be on a straight 90, 80, 70, 60 percent basis.
Available at <http://my.unl.edu/>
- Web page:** <http://statistics.unl.edu/faculty/steve/bioinformatics/2008/>

Disabilities: Students with disabilities are encouraged to contact the instructor for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Nebraska-Lincoln to provide flexible and individualized accommodation to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services, students must be registered with the Services for Students with Disabilities (SSD) office, 132 Canfield Administration, 472-3787 voice or TTY.

Objective: The objective of this course is to provide students with an understanding of statistical methods used in bioinformatics. Bioinformatics is a very broad term and we will focus on issues related to DNA and protein sequence analysis.

Outline

- Chapter 5: Analysis of One DNA Sequence
- Chapter 6: Analysis of Multiple DNA or Protein Sequences
- Chapter 7: Random Walks
- Chapter 8: Classical Estimation and Hypothesis Testing
- Chapter 9: BLAST
- Chapter 10: Markov Chains
- Chapter 11: Hidden Markov Models
- Chapter 13: Evolutionary Models
- Chapter 14: Phylogenic Tree Estimation